IN THE CLAIMS:

1. (Original) A communication device activation request system, comprising:

a sequence signal generator;

a transmitter configured to receive and transmit a sequence signal; and

a controller in communication with the sequence signal generator and the transmitter, the controller configured to initiate generation of a sequence signal in response to a request for communication from the communication device.

2. (Original) The system of Claim 1, wherein the sequence signal generator is configured to generate an M-sequence.

3. (Original) The system of Claim 1, wherein the communication device comprises a communication device operating under a digital subscriber line standard.

4. (Original) The system of Claim 1, wherein the request for communication occurs after a period of inactivity entered into reduce power consumption of at least one communication device.

5. (Original) A wake-up signal detection system for use in a communication device, the detection system comprising:

a receiver configured to receive a sequence signal;

a correlator configured to correlate the received sequence signal;

a comparator to compare the correlated received sequence signal to one or more threshold values;

a controller to determine whether to initiate a warm start process based on the output of the comparator.

6. (Original) The detection system of Claim 5, wherein the threshold values comprise predetermined signals or values that represent a signal indicative of a wake-up signal.

7. (Original) The detection system of Claim 5, further including a response generator configured to generate a response signal for transmission to a device sending the sequence signal.

8. (Original) The detection system of Claim 5, wherein a wake-up signal comprises a signal transmitted from a first communication device to a second communication device to request resumption of communication after a period of inactivity.

9. (Original) The detection system of Claim 5, wherein the one or more threshold values comprises signal levels at one or more frequencies.

10. (Original) An apparatus for restoring operation of a communication system after a period of inactivity, the communication system comprising at least a first communication device and a second communication device, the system comprising:

a sequence generator at the first communication device configured to generate a sequence signal upon request to initiate communication after a period of inactivity;

a transmitter at the first communication device configured to transmit the sequence signal to the second communication device, the sequence signal intended to initiate operation of the second communication device;

a receiver at the second communication device configured to receive the sequence signal;

a correlator at the second communication device configured to correlate the received sequence signal;

a signal processor at the second communication device configured to process the correlated signal to determine if the received signal is a sequence signal that signals a request to initiate operation.

11. (Original) The apparatus of Claim 10, further including an activity detection system configured to provide an indication upon a period of inactivity between the first communication device and the second communication device, to the communication system.

12. (Original) The apparatus of Claim 10, wherein the sequence signal is an M-sequence.

13. (Original) The apparatus of Claim 10, wherein the signal processor is configured to compare points of correlation, if any, of the correlated signal, to a threshold signal to determine if the first communication device is requesting an initiation of communication.

14. (Original) The apparatus of Claim 10, wherein the correlation comprises cross correlation.

15. (Original) The apparatus of Claim 10, wherein the period of activity is intended to at least reduce the power consumption of a communication system.

16. (Withdrawn) A signal for requesting resumption of communication between a first communication device and a second communication device, the signal comprising a signal selected from the group consisting of M-sequences defined as:

$$s(n) = s(n-2) \oplus s(n-5) \oplus f(n)$$

$$s(n) = s(n-1) \oplus s(n-6) \oplus f(n)$$

$$s(n) = s(n-3) \oplus s(n-7) \oplus f(n)$$

$$s(n) = s(n-2) \oplus s(n-3) \oplus s(n-4) \oplus s(n-8) \oplus f(n)$$

$$s(n) = s(n-3) \oplus s(n-5) \oplus f(n)$$

$$s(n) = s(n-5) \oplus s(n-6) \oplus f(n)$$

$$s(n) = s(n-4) \oplus s(n-7) \oplus f(n)$$

$$s(n) = s(n-4) \oplus s(n-5) \oplus s(n-6) \oplus s(n-8) \oplus f(n)$$

17. (Withdrawn) The signal of Claim 16, wherein the first communication device and the second communication device comprise communication devices configured to operate under a digital subscriber line technology.

18. (Withdrawn) The signal of Claim 16, wherein resumption of communication occurs after a period of inactivity entered into to reduce power consumption.

19. (Withdrawn) The signal of Claim 16, wherein the signal is generated utilizing a linear feedback shift register.

20. (Original) A method for reducing power consumption of one or more communication devices during periods of inactivity comprising:

detecting a period of inactivity;

entering into a mode of reduced power consumption;

receiving a request to resume communication;

generating a sequence signal in response to the request;

transmitting the sequence signal to a remote location to initiate communication.

21. (Original) The method of Claim 20, further including monitoring and receiving signals at a remote location;

correlating received signals;

analyzing the correlated signal to determine if the received signal qualifies as a request to resume communication.

22. (Original) The method of Claim 20, wherein the period of inactivity comprises a period of time when the one or more communication devices are not exchanging data.

23. (Original) The method of Claim 20, wherein the request to resume communication comprises a request for data from a user of one or more communication devices.

24. (Original) The method of Claim 20, further including periodically sending a channel monitoring signal to periodically obtain updated information regarding the channel.

25. (Original) A method for processing a received signal to determine if the received signal is a request to initiate a warm start operation, the method comprising:

filtering the received signal to create a filtered signal ;

correlating the filtered signal with a sequence signal to generate a correlated signal;

analyzing the points of correlation in the correlated signal to determine if the received signal is a request to resume communication.

26. (Original) The method of Claim 25, wherein analyzing comprises comparing the correlated signal with a threshold signal to determine if the correlated signal is a request for a communication.

27. (Original) The method of Claim 25, further including the step of initiation of a warm start operation if the analyzing reveals that the points of correlation match designated points of correlation.

28. (Original) The method of Claim 25, wherein a finite impulse response filter is used to perform correlating.

29. (Original) The method of Claim 25, wherein the received signal is a sequence signal.

30. (Withdrawn) A method for periodically modifying communication device settings to account for changes in a communication channel comprising;

sending a sequence signal from a first location to a second location over the communication channel;

receiving the sequence signal at the second location;

filtering the sequence signal at the second location;

correlating the sequence signal at the second location with a duplicate of the sequence signal to obtain a correlated signal; and

processing the correlated signal to determine changes in the communication channel.

31. (Withdrawn) The method of Claim 30, further including modifying the communication device settings, based on the processing, to account for changes in the communication channel.

32. (Withdrawn) The method of Claim 30, wherein the sequence signal comprises an M-sequence type sequence signal.

33. (Withdrawn) The method of Claim 30, wherein the communication channel comprises one or more twisted pair conductors.

34. (Withdrawn) The method of Claim 30, further including sending a sequence signal from the second location to the first location;

receiving the sequence signal at the first location;

filtering the sequence signal at the first location;

correlating the sequence signal at the first location with a duplicate of the sequence signal to obtain a correlated signal; and

processing the correlated signal to determine changes in the communication channel.

35. (Withdrawn) A method for updating communication device settings to aid in executing a warm start operation, the method comprising:

receiving a sequence signal;

correlating the sequence signal;

processing the correlated sequence signal to determine current channel characteristics;

adjusting the communication device settings based on the processes.

36. (Withdrawn) The method of Claim 35, further including comparing the current channel characteristics to channel characteristics at a time prior to the processing; and

modifying the communication settings if the comparing determines the current channel characteristics are different than the channel characteristics at a time prior to the processing.

37. (Withdrawn) The method of Claim 35, wherein the adjusting assists in the warm start operation by adjusting the communication device settings to match current channel characteristics.

38. (Withdrawn) The method of Claim 35, wherein a warm start comprises a resumption of communication device operation after a period of inactivity.

39. (Withdrawn) The method of Claim 35, wherein the communication device comprises a device operating under a digital subscriber line standard.

40. (Withdrawn) The method of Claim 35, wherein the sequence signal comprises a sequence signal based on an M-sequence.

41. (Withdrawn) A method for determining whether to initiate a warm start operation or a cold start operation for one or more communication devices, the method comprising:

generating a sequence signal at a first device;

transmitting the sequence signal to a second device;

receiving the sequence signal at the second device;

correlating the sequence signal at the second device;

analyzing the correlated signal at the second device to determine current channel characteristics;

comparing the current channel characteristics to at least one prior channel characteristic; and

selecting between a warm start operation and a cold start operation based on the comparing.

42. (Withdrawn) The method of Claim 41, further including transmitting a sequence signal to the first device from the second device.

43. (Withdrawn) The method of Claim 41, further including adjusting at least one setting of the second device based on the analyzing.

44. (Withdrawn) The method of Claim 41, wherein selecting comprises selecting a warm start operation if the comparing reveals the channel characteristics have not changed

beyond a threshold level and selecting a cold start operation if the comparing reveals the channel characteristics have changed beyond a threshold level.

45. (Withdrawn) The method of Claim 41, wherein the cold start operation takes a longer period of time to complete than the warm start operation.

46. (Currently Amended) A ~~The~~ system for initiating a warm start operation comprising:

means for generating a sequence signal, the sequence signal of the type predetermined to initiate a warm start;

means for transmitting the sequence signal to a remote communication device to initiate communication;

means for detecting a signal and processing a signal to determine if a signal is a request for a warm start operation;

means for initiating a warm start operation if the means for detecting determines a signal is a request for a warm start operation.

47. (Original) The system of Claim 46, wherein the means for detecting a signal comprises a correlator.

48. (Original) The system of Claim 46, wherein the means for generating a sequence signal comprises a scrambler.

49. (Original) The system of Claim 46, further including mean for generating and transmitting an acknowledgement signal.